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(54) Title: **METHOD FOR SPATIALLY RESOLVED DETERMINATION OF MAGNETIC PARTICLE DISTRIBUTION IN AN AREA OF EXAMINATION**

(57) Abstract: The present invention relates to a method for improved spatially resolved determination of magnetic particle distribution in an area of examination, where the changes in spatial distribution, the concentration and/or the anisotropy of these magnetic particles in the area of examination are monitored. The invention further also relates to magnetic particle compositions having improved magnetic imaging properties for use in the method according to the invention. The present invention further also relates to a method and an apparatus having improved spatial resolution in the method according to the invention by application of a high frequency field to increase the spin temperature of the spin systems of the magnetic particles.